



March 1, 2009

To: whom it may concern

I am writing in strong support of the VACET Center for Enabling Technology for their upcoming review. The VACET team has done an extraordinary job at making scientific visualization software, the VisIt package to be specific, not only available to, but also usable by the scientific community

I am lead PI of the FACETS SciDAC as well as an institutional PI for one of the primary institutions for the COMPASS SciDAC. We were pleased to receive Hank Childs at Tech-X in 2007 to hear about the capabilities of VisIt. It seemed probable at the time that VisIt could meet our needs, as we were in need of a scientific visualization package that would allow us to remotely visualization the large datasets that we were generating. Further, the cross-platform nature of VisIt meant that our scientists, who work from desktops and laptops running Linux, Windows, and OS X, would all be able to use VisIt. Finally, the fact that VisIt could work with ssh tunneling meant that we would be able to circumvent the firewall problems that had plagued us over the years with other solutions.

Two years have passed, and I am glad that we decided to invest in VisIt. The VisIt team helped us early on in use of VisIt and in getting our data into VisIt by giving us with advice and assistance in writing a plugin. They were responsive to our needs. We were sufficiently excited about this that we went on to develop a generic schema (VizSchema) for describing data to be visualized and modified our plugin to be compliant. Gunther Weber from the VisIt team helped us to make our plugin parallel, so that we could visualization the 20-100 GB data files that we now routinely generate in our simulations. Moreover, we are able to visualize data from both of the above SciDACs (VORPAL and FACETS data), as well as data from other SciDACs (NIMROD data for CEMM, VORPAL data for CSWIP), and even data from the Climate community (using the MODAVE project) and for materials science (the PolySwift++ computational application). Images of data from these various communities (generated by VisIt with data imported by the VizSchema plugin) are visible at <https://www.txcorp.com/trac/vizschema>. These visualizations have appeared on the cover and interiors of the SciDAC Review, as well. At every stage of our work, the VisIt team has been responsive to our needs and helped us meet our goals.

Perhaps of special mention is that we were able to use the VisIt application to win an OASCR People's Choice award at the 2008 SciDAC meeting in Seattle. (See <https://hpcrd.lbl.gov/SciDAC08/files/vis-night.html>.) The fact that VisIt works so well with other software was instrumental here, as we were able to augment the visualization by taking VisIt output and adding some special effects to it through importation into a ray-tracing program.

Given our success in using VisIt, we are now moving ahead with plans for customizing it to meet our needs for individual projects. VisIt is a powerful tool; it can nearly anything

that a user in any domain might need (and the VisIt team is working hard, I know, to provide even more capability, such as improvements to streamlines). Our intention is to build some “dumbed-down” VisIt-like applications (so called *Skins*) that would do only what is needed for a particular area of science. We have plans to do this in both fusion (for FACETS data) and in accelerators. This would be based on VisIt technology, but with choices more limited to those that make sense to our particular application areas. This will probably help widen the usage of VisIt technology in our application areas.

I expect this to succeed, in part because it is my feeling that in many respects we are not just recipients of VACET software, but we are collaborating with them and so benefit from their knowledge as well. This was and is eminently true in terms of plugin development. I have no doubt that it will continue in the development of the various *Skins* that we will undertake with their help.

In summary, I am sold on VisIt and the VACET team. They are providing a great service to our community in not only providing a tool, but also in providing usable tool that helps scientist extract knowledge from the huge amounts of data that are being generated by SciDAC applications now in use.

Sincerely,

A handwritten signature in black ink, reading "JR Cary". The signature is fluid and cursive, with the first letters of each name being capitalized and prominent.

John R. Cary  
CEO, Tech-X  
Prof. Physics, University of Colorado